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**Watch out for**  
**WITCHWEED**  
**a serious pest of**  
**corn, sorghum, and other crops**



UNITED STATES  
DEPARTMENT OF  
AGRICULTURE

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PREPARED BY  
ANIMAL AND PLANT  
HEALTH INSPECTION  
SERVICE

# Watch out for **WITCHWEED** a serious pest of corn, sorghum, and other crops

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Witchweed (*Striga spp.*) is a parasitic plant that attacks corn, sorghum, sugarcane, rice, and more than 60 different species of the grass family. It is a major crop pest in many areas of the world, particularly in Asia and South Africa. Witchweed was discovered in the United States in 1956, in adjoining areas of North Carolina and South Carolina. While the weed is known to infest only this small area, it still remains a threat to host crops throughout the United States.

## What It Looks Like

The witchweed plant is small and bright green. It ranges from 8 to 12 inches high, although some plants may grow to more than 18 inches. The pest is best recognized by its flowers—usually red in color, but sometimes yellow or white. Blossoms appear from about July 1 until the first killing frost.

Witchweed's other trademarks are its square stem and slightly hairy leaves. The upper and lower leaf surfaces look alike.

## How Witchweed Grows

A single witchweed plant can produce up to 500,000 microscopic seeds in only 1 year. These are easily spread by farm or construction equipment, water, movement of infested soil, and locally by wind.

Witchweed seeds are long-lived—some surviving in the soil for 15 years or more. Germination occurs when seeds are stimulated by secretions from plant roots. However, seeds must first undergo 2 weeks of preconditioning in warm, moist soil.

In germinating, each witchweed seed puts out a rootlike growth (called haustorium) which attaches to the roots of nearby host plants. These host roots must be within one-eighth of an inch from the witchweed, or the pest cannot survive.

Once attached to a plant root, the witchweed seedling robs its host of food and water. During this “below-the-ground” period, the pest does its most serious damage. After emerging, witchweed does produce part of its own food, but continues drawing on the host for water, minerals, and nutrients.

Witchweed seedlings appear above ground in June, and begin to flower 10 to 14 days later. Seed pods mature 9 to 14 days after the flowers bloom. Germination, flowering, and seed production continue until frost.

Witchweed grows best in warm temperatures and on light soils with high moisture levels. It can, however, grow under the wide range of soil, moisture, and temperature conditions found in U. S. corn and sorghum regions.



## How It Damages Hosts

The extent of crop damage caused by witchweed depends on the degree of infestation. A heavy infestation can result in complete crop loss.

Fields infested by witchweed look drought stricken. Plants become stunted, wilted, and turn yellowish. Damage symptoms usually appear on host plants before the pest emerges from the ground. Before efforts to control heavy infestations were begun, Carolina corn yields suffered severe losses.

## How Witchweed Is Controlled

The U. S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) cooperates with North Carolina and South Carolina to eradicate witchweed. This program has been responsible for keeping the weed confined to those two States. Cooperative efforts have resulted in witchweed eradication from more than one-fifth of the 37 originally infested counties. The campaign to get rid of this pest focuses on three main activities: survey, quarantine, and control.

**Survey** Each year, APHIS conducts indepth surveys in the infested and surrounding noninfested areas. This information obtained is used to (1) plan cooperative control and

quarantine activities, (2) locate new infestations, and (3) judge the effectiveness of the control work.

APHIS also relies on public cooperation in the witchweed search, asking farmers and other property owners to report possible findings.

**Quarantine** Federal-State quarantines are imposed on all infested areas to regulate the movement of certain articles and materials into areas not affected by witchweed. Such items as soil, plants, certain agricultural crops, and farm and construction equipment can spread the pest "artificially" to uninfested areas.

Before moving regulated items from an infested area, farmers and residents should check with State or Federal Plant Protection and Quarantine Programs officials, or the county agricultural agent. They can explain local quarantine restrictions.

### Witchweed

- (A) corn plant stunted by witchweed
- (B) general appearance of the weed
  - (a) seed pods
  - (b) blossoms
- (C) attachment of weed root to corn root (greatly magnified)

The pencil is to indicate actual size of plant







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**Control** APHIS controls witchweed with various herbicides and germination stimulants. These treatments begin even before the weed is in bloom, and continue as needed until plant growth is stopped by frost. Controls are repeated each year until surveys show eradication is achieved.

Specialized equipment makes the witchweed control effort much more effective. For example, low pressure sprayers permit precise herbicide application without drift hazard. These are particularly useful near crops sensitive to herbicides.

Small, isolated infestations are sometimes fumigated with methyl bromide to kill viable seeds in the soil. Selective herbicides are used to kill witchweed plants and prevent seed

production.

Ethylene, a chemical injected underground, causes witchweed seed to germinate and die in the absence of host plants. This treatment is used to reduce the amount of witchweed seed in the soil.

Federal and State governments share the cost of all control activities.

More efficient methods of fighting witchweed are continually sought. The APHIS Methods Development Center in Whiteville, N.C., researches and develops the new techniques needed for better witchweed control. Among its achievements are improved herbicides, more efficient equipment, advanced techniques for finding the tiny witchweed in soil, and new germination stimulants.

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## How You Can Help

Keep an eye out for signs of witchweed, especially in July, August, and September. Look for it growing near corn, sorghum, and grasses such as crabgrass. Don't overlook gardens, vacant fields, lots, roadsides, yards, and areas around farm buildings.

Notify your county agricultural agent if you find a plant you think may be witchweed.

Ask for an on-the-farm identification. **DO NOT UPROOT SUSPECTED PLANTS FROM YOUR FIELDS!!**

Cooperate with State and Federal officials if your farm is infested. Allow them on your farm to assess the situation, and follow recommended controls—especially on crops or land not included in the witchweed

program.

Keep such crops as peanuts, cotton, and soybeans free of crabgrass and other grassy weeds that can host witchweed. These crops are not parasitized by witchweed, but do produce a chemical that causes the seed to germinate.

Control witchweed after harvest on fields of early crops such as cucumber and tobacco. Cultivate or spray these areas to destroy grasses that can host witchweed until frost.

Treat uncultivated areas also—especially ditches, roadsides, and abandoned fields. Spray witchweed before it blooms and repeat the treatment until all host plants are killed by frost.



# **Plant Protection and Quarantine Programs May 1978**

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